What is claimed is:

1. A device for imaging printing plates comprising:

an array of n laser diodes which image n image points, so that one laser diode of the array is allocated to each i-th point, with i being from {1, ..., n}, the n image points being separated by a spatial interval l between adjacent image points, with a pitch distance p of dots to be imaged by the array,

the laser diodes being individually-drivable single stripe laser diodes.

2. The device as recited in claim 1 wherein the spatial interval l between adjacent image points, measured in units of the pitch distance p of the dots, is an integral multiple m of the pitch distance p between the dots.

3. The device as recited in claim 2 wherein the integral multiple m and the number n of image points have no common denominator.

4. The device as recited in claim 1 wherein the spatial interval l of adjacent image points, measured in units of the pitch distance p of the dots, is smaller than the number n of the image points.

5. The device as recited in claim 1 wherein the multiple m and the number n of the image points are prime numbers.

6. The device as recited in claim 1 further comprising imaging optics for correcting at least one of divergence and aberration.

7. The device as recited in claim 1 further comprising a control unit, at least one of the laser diodes of the array being controlled by the control unit.

8. The device as recited in claim 1 wherein the number of laser diodes in the array is between 10 and 100.

Sub A3 Cont.

9. The device as recited in claim 1 wherein the laser diodes are spaced apart on the array by a distance of between 100 and 1000 micrometers, and a width of emitter surfaces of the laser diodes is less than 10 micrometers.

Sub B1

10. The device as recited in claim 9 wherein the width is 5 micrometers.

Sub A4

11. The device as recited in claim 1 further comprising at least one detector for testing for correct functioning and determining a power output of one or of a plurality of the laser diodes.

12. The device as recited in claim 11 further comprising a laser controller, the laser controller being controlled as a function of the power output determined by the detector.

13. The device as recited in claim 1 wherein at least one laser diode is a pulse controlled laser.

14. The device as recited in claim 13 wherein a repetition rate of the light pulses is at least exactly as great as a pulse frequency of the pulse-controlled laser in order to displace the individual dots.

15. The device as recited in claim 1 further comprising imaging optics including at least one reflective optical element.

16. The device as recited in claim 1 further including imaging optics having micro-optical components.

17. The device as recited in claim 1 wherein the printing plate is erasable or rewritable.

Sub B1

18. An interleaving raster scan line method for imaging printing plates by generating raster points using an array of *n* laser light sources, which use an imaging optics to image *n* image points arranged on a line, the *n* image points being separated by a spatial interval of adjacent points *l*, comprising the steps of:

simultaneously generating *n* image points on a printing plate by a plurality of laser light sources;

generating a relative motion between the image points and printing plate;

displacing the image points with a translation component perpendicular to an axis defined by the line of the image points by a first specific amount;

displacing the *n* image points in a direction defined by the *n* image points by a second specific amount;

repeating the displacement steps, an amount of the second specific displacement being greater than the spatial interval *l* of adjacent image points.

19. The interleaving raster scan line method as recited in claim 18 wherein the second specific amount, measured in units of the pitch distance *p* of dots to be imaged, is equal to the number *n* of image points.

20. The interleaving raster scan line method as recited in claim 19 wherein the spatial interval *l* of the image points is an integral multiple of the pitch distance *p* of dots of the laser diodes.

21. The interleaving raster scan line method as recited in claim 18 wherein the spatial interval *l* of the image points, measured in units of a pitch distance *p* of dots of the laser diodes, and the number of laser diodes *n* have no common denominator.

22. The interleaving raster scan line method as recited in claim 21 wherein the spatial interval *l* of the image points, measured in units of the pitch distance *p* of the dots, and the number of laser diodes are prime numbers.

23. A print unit comprising at least one device for imaging printing plates, the device including an array of *n* laser diodes which image *n* image points, so that one laser diode of the array is allocated to each i-th point, with *i* being from {1, ..., *n*}, the *n* image points being separated by a spatial interval *l* between adjacent image points, with a pitch distance *p* of dots to be imaged by the array, the laser diodes being individually-drivable single stripe laser diodes.

24. A printing press comprising at least one print unit in accordance with claim 23.